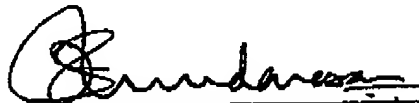




5. A copy of an Invention Disclosure to the Georgia Tech Research Corporation ("GTRC") Office of Technology Licensing is attached as Exhibit A. The Invention Disclosure names Surgmee Park and me as joint inventors.
6. The Disclosure of Exhibit A provides specific details regarding key elements of the claimed invention, including the incorporation of a conductive fiber into the fabric and the ability to incorporate the conductive fibers into a wearable motherboard.
7. The Disclosure of Exhibit A further provides a specific reference to the 09/157,607 application, filed on September 21, 1998, on which I am a named inventor.
8. The present application is the result of continuing research of the invention described in the 09/157,607 application (now U.S. Patent No. 6,145,551).
9. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful statements may jeopardize the validity of the application or any patent issued thereon.

September 18, 2002  
Date

  
Sundaresan Jayaraman, Ph.D.

**GEORGIA TECH RESEARCH CORPORATION**  
**RECEIVED TECHNOLOGY LICENSING**  
**Georgia Institute of Technology**  
SEP 20 2002

**CONFIDENTIAL** **INVENTION DISCLOSURE**

1. Title of Invention: Georgia Tech Wearable Motherboard: The Next Generation.

2. Short Title: GTWM: The Next Generation

3. a. Inventor's name: Dr/Mr/Ms JAYARAMAN SUNDARESAN

Title: PROFESSOR Last First Middle  
Inventor's Interest 50 % SS No.

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b. Inventor's name: Dr/Mr/Ms PARK SUNGMEE

Last First Middle  
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4. Did this invention result from sponsored research? If so, please give details.

Sponsor: NO G.I.T. Project No. \_\_\_\_\_

Sponsor: \_\_\_\_\_ G.I.T. Project No. \_\_\_\_\_

5. Has the invention been disclosed in an abstract, paper, talk, project report or thesis? YES\_\_\_ NO\_\_\_ X\_\_\_  
Type of disclosure: \_\_\_\_\_ Disclosure date: \_\_\_\_\_
6. Is a publication or other disclosure planned in the next six months? YES\_\_\_ x\_\_\_ NO\_\_\_  
Type of disclosure: \_\_\_\_\_  
Disclosure date: \_\_\_\_\_
7. Brief description of the invention (attach more detailed description).  
A new version of the Georgia Tech Wearable Motherboard (GTWM) has been developed with three principal and significant innovations over the earlier generations. First, the garment is itself capable of sensing the vital signs of the wearer; this means there is no need for special-purpose sensors to obtain the vital signs (e.g., heart rate and respiration) from the wearer. In the earlier versions of GTWM, these sensors mounted on the body could be "plugged" into the garment which then transferred the vital signs to monitoring equipment. Second, the innovative design of the single-piece garment provides complete flexibility in wearing the garment (especially for, but not limited to, newborns, fire accident victims, senior citizens), and the garment can accommodate the growth in the dimensions of the wearer. Third, the potential for the wearer to get entangled in the wires that lead to the monitoring equipment (e.g., baby apnea monitors) is greatly reduced. A prototype embodying these concepts has been designed; a version of this next generation GTWM has been produced using knitting. The knitted embodiment shown in Figures 1 and 2 is the next generation GTWM or Smart Shirt for Infants. Woven versions of this garment with similar functionality and innovation can also be produced. Likewise, versions of the next generation GTWM for adults and other applications targeted by the first generation GTWM can be produced.
8. Does the description provided above enable one skilled in this area of technology to make and use the invention? YES\_\_\_ x\_\_\_ NO\_\_\_ If not, please explain. \_\_\_\_\_
9. Have you disclosed the best mode known to you at this time of carrying out your invention?  
YES\_\_\_ x\_\_\_ NO\_\_\_ If not, please explain. \_\_\_\_\_  
\_\_\_\_\_
10. Date of conception \_\_\_\_\_
11. Has the invention been reduced to actual practice (i.e., have products, apparatus or compositions, etc. actually been made and tested)? YES\_\_\_ x\_\_\_ NO\_\_\_ If YES, date of reduction to practice. \_\_\_\_\_  
\_\_\_\_\_

12. Does the invention appear to pass the following tests for patentability:  
Novelty: x Non-obviousness: x Usefulness: x
13. Has a patent or literature search been undertaken? YES \_\_\_\_\_ NO X
14. Are related patents or other publications known to you? YES X NO \_\_\_\_\_ (If yes, please attach list.)  
All related GT Invention Disclosures; GT Patent applications: 09/157,607 and 09/273,175; Provisional Patent Application for Fabric Or Garment With Integrated Flexible Information Infrastructure For Monitoring Vital Signs Of Infants, submitted to USPTO,
15. Are laboratory records and data available? YES x NO \_\_\_\_\_
16. What are the immediate and/or future applications for the invention? Valuable for medical monitoring of individuals such as, but not limited to, the elderly, firefighters, infants prone to SIDS, athletes, patients recovering from surgery, telemedicine, and astronauts.
17. What are the advantages of the invention? Why is it better than present technology? What are its novel and unusual features? What problems does it solve?  
This new (or next) generation of the Georgia Tech Wearable Motherboard pioneers the concept of a garment in and of itself becoming a monitoring device without the need for special-purpose sensors for obtaining the vital signs (e.g., heart rate and respiration) from the wearer. In addition to inheriting all the advantages of the earlier generations of GTWM, this new invention has the significant advantage of obviating the need for sensors to be attached to the body of the wearer to obtain the vital signs. Such sensors can cause rashes, can be difficult to apply and take-off especially if the skin is very sensitive (newborns, fire accident victims, senior citizens, the acutely ill, etc.). Thus, this new invention can increase the reliability and effective monitoring of infants prone to SIDS (sudden infant death syndrome), senior citizens, firefighters, athletes, astronauts, pilots, patients recovering from surgical procedures and thereby enhance the quality of human life. In short, this invention significantly broadens the audience for the application of the GTWM technology
18. Are there any limitations to be overcome prior to practical application? None Known
19. Is work on the invention continuing? YES x NO \_\_\_\_\_
20. Do you know of any appropriate industrial organizations which may be interested in licensing this technology?  
Company Name: Any medical monitoring company Contact: \_\_\_\_\_  
Company Name: \_\_\_\_\_ Contact: \_\_\_\_\_

Company Name: \_\_\_\_\_ Contact: \_\_\_\_\_

(Please attach sheet if more space required )

21. Execution by Inventor(s).

I/We inventor(s) hereby solemnly swear and affirm under oath that I/we am/are the only inventor(s) of this invention and that I/we have not knowingly omitted the inclusion of any other inventor(s) besides me/us.

Signature(s) of inventors(s) and date:

\_\_\_\_\_ Date \_\_\_\_\_

\_\_\_\_\_ Date \_\_\_\_\_

**Execution by Witnesses**

This invention was disclosed and explained to me by the inventor(s) whose signature(s) appears above on the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

\_\_\_\_\_ Date \_\_\_\_\_  
Signature of Witness

This invention was disclosed and explained to me by the inventor(s) whose signature(s) appears above on the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

\_\_\_\_\_ Date \_\_\_\_\_  
Signature of Witness

Return this form (with any attachments to Technology Licensing/GTRC, Centennial Research Building, Room 275, 400 10<sup>th</sup> Street, Atlanta, Georgia 30332-0415. If you have any questions, please call (404) 894-6287.